

The ISA Power Industry Division

○ *Its History and Contributions to the Power Industry* by Robert N. Hubby

An Overview

ISA—The Instrumentation, Systems, and Automation Society is an organization of technical professionals whose common interest is the development and application of instrumentation, automation and controls. Within ISA, the leadership recognized that individual members of the Society could also have a focus in specific industry areas. By creating Divisions, ISA provided each member an opportunity to closely align their own personal interests with their industry peer group. The Power Industry Division (POWID) was formed in 1957 as one of ISA's earliest industry related technical divisions. A thirty-two (32) member Executive Board representing utility users, university scientists, prime equipment manufacturers, architect engineers, and power industry vendors governs the Division. Today, POWID provides a means for information exchange and networking among engineers, scientists, technicians, stu-

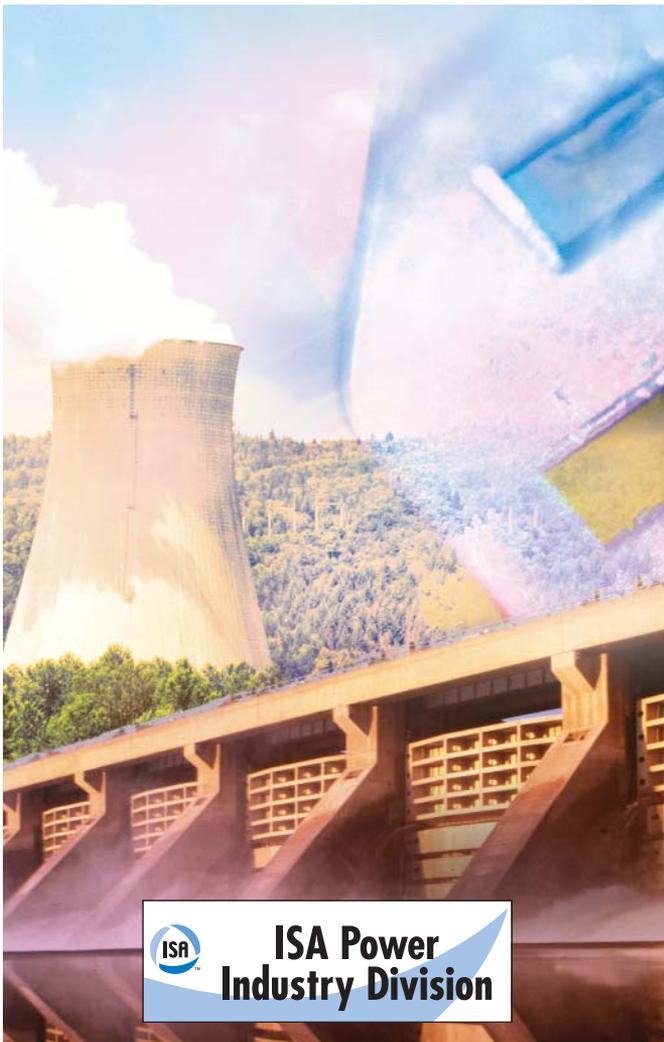
dents/universities, and management individuals who are involved with instrumentation, automation, and controls relating to the generation and production of electric power.

POWID has become the venue of choice for utility users, primary equipment manufacturers, architect engineers, and equipment vendors to share advancements to instrumentation systems and automation in the electric generation industry. Its membership base is comprised of an international community of end-users, architect engineers, prime mover equipment manufacturers, as well as vendors. Members and participants in POWID are recognized worldwide as the key instrumentation and controls stakeholders of the utility industry. POWID provides its members exposure to the full range of utility industry technical programming, technology information exchange, and standards development activities and thereby affords each individual an opportunity to develop their full capabilities for new instrumentation, systems, and automation applications. The ISA Power Industry Division has a current global membership of approximately 2,400 members.

The Annual ISA POWID/EPRI Controls and Instrumentation Conference

The annual Symposium is the central event where the practitioners of instrumentation, systems, and automation gather to exchange and discuss the advanced technologies in the power industry. This symposium combines technical paper presentations with a broad range of technical training classes, standards committee meetings/workshops, and vendor table-top sessions. Table-top sponsors bring new key emerging technologies to provide hands-on experience for the symposia attendees. Training classes have included such topics as: basic boiler control, burner management, advanced control technologies, measurement accuracy and uncertainty analysis, and distributed control systems technology.

POWID's first symposium was held in New York City in 1958. Since then, annual symposia have been held in cities across the entire United States and Canada, including Boston, Rochester, Toronto, Philadelphia, Pittsburgh, Baltimore, Williamsburg, Atlanta, Orlando, St. Petersburg, Chicago, Detroit, Cleveland, Kansas City, Knoxville, New Orleans, Houston, Fort Worth, San Antonio, Dallas, Denver, Colorado Springs, Phoenix, San Francisco, and San Diego.



POWID initiated a joint programming commitment with the Electric Power Research Institute (EPRI) in 1991 to adjoin the significant power industry research sponsored by EPRI with the technical deliberations of the ISA Power Industry Division. The 2004 Annual Joint ISA POWID/EPRI Controls and Instrumentation Conference represented the 14-year of joint programming. EPRI acknowledges the symposiums' significance to the industry by scheduling its annual I&C (Instruments and Controls) Interest Group Meeting in conjunction with this conference.

Symposium Proceedings are available every year for the conference participants. Past proceedings for years 1999 through 2003 are available on the Division's web site as a service to instrumentation, systems, and automation practitioners worldwide who may not be able to attend the annual Symposium.

The division has conducted 47 symposia with attendance ranging from 150 to 325 participants.

Technical Programming at the ISA Annual Conference and Exhibit

ISA's Annual Conference and Exhibit is held each fall and the ISA divisions are requested to provide technical content to the conference portion of the weeklong event. POWID provides three to four sessions of electric utility industry technical programming at this conference. By presenting technical content at this program, attending POWID Members can stay connected to the latest power industry developments. They can also attend the major annual instrumentation, systems, and automation exhibit sponsored by the Society. A yearly attendance is approximately 15,000 to 20,000. The Power Industry Division sponsors and assists in staffing ISA's Student Bowl competition where teams of instrument engineering students compete to answer or solve instrumentation, systems, or automation questions prepared by the Senior Members of ISA.



Recognition of Significant Contributions to the Power Industry

The Power Industry Division sponsors two annual awards that recognize significant contributions to the power industry: the Power Industry Division Achievement Award and the Power Industry Division Facilities Award.

The Power Industry Division Achievement Award recognizes "Individuals within the ISA Power Industry Division for outstanding achievement, original design application, or special contributions towards the development of engineering concepts in the field of instrumentation and controls for the advancement of electric power generation". This award was founded in 1977 and has recognized outstanding achievements from twenty-eight (28) engineers. Recipients represent the electric utility users, primary equipment manufacturers, architect engineers who design the power plants, and innovative vendor engineers who support the electric utility industry. Recipients include engineers from Philadelphia Electric, Illinois Power Co, New Orleans Public Service Co, Ontario Hydro, Washington Public Power District, Florida Power Corp, Pennsylvania Power and Light, Reliant Energy, Babcock and Wilcox, Foster Wheeler, Combustion Engineering, Gilbert Commonwealth, Ebasco Services Co, Sargent and Lundy, Black and Veatch, EPRI, Westinghouse, Bailey Controls, Leeds and Northrup, Utility Products of Arizona, and Amtech Services. Each year's recipient of the POWID Achievement Award is able to select student(s) to receive a scholarship from the Power Industry Division.

The Power Industry Division Facilities Award recognizes "Outstanding application of innovative control systems and/or instrumentation technology in the production of electric power" and was founded in 1992. The first Facilities Award recipient was the Philadelphia Electric's Eddystone Station; eleven outstanding facilities have been recognized since the founding of the award. Utilities recognized include Alabama Power, Central and South West, Michigan State University, CINergy, Virginia Electric Power, Montana Dakota Utilities, Trans Alta Corp, Consumers Energy, Reliant Energy, and Texas Utilities.

Power Division Standards Activities

Critical to the electric generation industry, POWID serves a key role in the development of standards for both fossil and nuclear power plants. Because POWID Members are uniquely qualified to represent the industries' leading technical professionals, it is the ideal forum to create standards for this industry.

SP77 Fossil Power Plant Standards Committee consists of forty-five (45) voting and information members while SP67 Nuclear Power Plant Standards Committee includes thirty-seven (37) voting and information members. This represents a broad consensus of all the stakeholders of the national and international power utility industry. Voting and informational committee members include industry users, architect engineers, prime mover equipment manufacturers, as well as vendors. Each standards committee is not only responsible for the development of industry standards, recommended practices, and technical reports but also are responsible to support the orderly reaffirmation of these standards every five years.

Fossil Power Plant Standards

The SP77 Fossil Power Plant Standards Committee has developed and maintains twelve (12) standards, recommended practices, or technical reports addressing steam turbine controls, turbine bypass control systems, fossil fueled power plant simulators, boiler controls including combustion control, feedwater control, unit/plant demand development, and steam temperature controls for drum type and once through boilers, human/machine interface standards including electronic screen displays, alarm management and task analysis, instrument piping installation, standard software for CEMS relative accuracy test audit data, SCR controls, and integrating electronic security into the manufacturing and control systems environment.

Nuclear Power Plant Standards

The SP67 Nuclear Power Plant Standards Committee has developed and maintains eight (8) standards, recommended practices, or technical reports addressing transducer and transmitter installation for nuclear safety applications, nuclear safety-related instrument sensing line piping and tubing standard for use in nuclear plants, standard for light water reactor coolant pressure boundary leak detection, set points for nuclear safety-related instrumentation including methodologies for their determination, set points for sequenced actions, performance monitoring for nuclear safety-related instrument channels in nuclear power plants, and qualifications and certification of instrumentation and control technicians in nuclear facilities.

Communications to Power Division Members

The ISA Power Industry Division communicates to its Members by means of newsletters and its Division web

page (www.isa.org/~powid). The web page was developed to provide instant communication to Division Members throughout the world as well as providing a resource of rich information. The web page includes the Director's messages, current and past newsletters for several years including best symposia paper technical articles, Executive Board meeting minutes and roster, the latest annual report, and the technical program for the current year's symposium. The Division also maintains a link to a local website which includes links to symposia conference vendor sponsor websites as well as the proceedings of the past five (5) years symposia.

POWID maintains its web site and publishes two to three comprehensive newsletters per year as a service to its Members. Newsletter content is another method to enlighten membership of the Division's goals, technical information, and recent and future events or activities.

Included in a typical newsletter is a Director's message on past, present, or upcoming events, information on upcoming symposia/conferences, a Power Tech Corner to present solutions/discussions of key instrumentation/control problems for the power industry, all



of the best technical papers from POWID's symposia or conferences, as well as meeting minutes of the Power Industry Division Executive Board and the Fossil and Nuclear Power Plant Standards Committees. After distribution to Power Division Members, newsletters are posted to the Division's web site.

Academic Scholarships

The ISA Power Industry Division sponsors two annual academic scholarships to students who are pursuing future careers as engineers and technical practitioners in the instrumentation, systems, and automation field for power generating plants as undergraduate students in accredited colleges and universities. One of these academic scholarships is associated with the POWID Achievement Award, as discussed previously. The recipient of the POWID Achievement Award selects a qualified student(s) from an accredited college(s) or university of his/her choice to receive a one time scholarship grant.

The other academic scholarship is a merit-based scholarship, the "ISA Power Industry Division Robert N. Hubby Academic Scholarship". ISA Power Industry Division Members submit and sponsor applications of qualified students to the POWID Executive Committee. The POWID Executive Committee selects and approves one annual scholarship from the applications received from its membership.

Plans for the Future

Plans for the future include the Annual Joint ISA POWID/EPRI Controls and Instrumentation Conference in Nashville in early June, 2005, Las Vegas in 2006, and then our 50th Symposia/Conference in 2007 in Pittsburgh, the site of the founding of ISA in 1945. The Division will continue its significant efforts to support fossil and nuclear power plant standards. Finally, the Division will strive to be the venue of choice for utility users, primary equipment manufacturers, architect engineers, and equipment vendors to share advancements to instrumentation, systems, and automation in the power industry.

